

Image Sensor For Digital CamerasABSTRACT

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An apparatus for recording an image. The apparatus includes a two-dimensional array of image sensors. Each image sensor provides a measurement of the light intensity in a selected spectral region. The two-dimensional array is generated from a plurality of identical blocks of sensors, the blocks being juxtaposed to form the array. Each of the blocks has 10 equal numbers of sensors for each of the spectral regions, the number of different spectral regions being at least three. The sensors in the blocks are arranged in a two-dimensional array having a plurality of rows and columns. The sensors in the blocks are arranged such that any straight line passing through a given sensor also passes through sensors of at least three different colors whose spectral responses are all linearly independent. In the preferred 15 embodiment of the present invention, all three such sensors lie within a disk, centered at the first sensor and having a radius no larger than five times the center to center spacing of the blocks in the sensor array. In the preferred embodiment of the present invention, each of the sensors corresponding to one of the selected spectral regions in blocks not adjacent to an edge of the two-dimensional array is adjacent to a sensor corresponding to the same spectral 20 region.

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